

REMARKS

The present amendment is submitted in response to the Office Action dated July 31, 2006.

Claims 1-21 are currently pending in the application. Claims 1, 6, 7, 10, 20 and 21 have been amended. Applicants would like to specifically draw Examiner's attention to newly amended claims 1, 10, 20 and 21 which incorporate the subject matter of claims 5 and 14. No new matter or issues are believed to have been introduced by this amendment. In view of the above amendments and the following remarks, reconsideration and allowance of this application are respectfully requested.

The applicant is resubmitting the IDS previously filed on May 3, 2006 with copies of the references and/or translations, since the Examiner stated that the first page of the IDS and certain references and/or translations were missing from the file. The applicant is also including a copy of a post-card receipt clearly indicating that the resubmitted documents have been previously received by the USPTO.

In the Office Action, claims 1-3, 6-8, 10-12, 15-17 and 19-21 were rejected under 35 USC §102(b) as being anticipated by U.S. Patent No. 6,033,399 to Gines (hereinafter "Gines"). The newly amended claim 1 recites "a waveform generator for receiving the at least one waveform adjustment signal which alters the duty cycle of the at least one waveform to adjust the output crest factor and output power of the at least one waveform based on the determined tissue impedance." In contrast, Gines only recites that "the output power can be adjusted by changing the duty cycle or the crest factor." (Gines, col. 6, lines 40-50). In particular, Gines teaches that crest factor along with duty cycle may be used to modify output power but nowhere is it anticipated, taught or suggested in Gines to adjust the crest factor via the duty cycle. The Examiner seemingly has conceded this point, i.e., the Examiner also stated that Gines fails "to disclose the specific formulas for determining the

output crest factor based on duty cycle.” (Final Office Action of July 31, 2006, p. 5). Accordingly, the rejection under 35 USC 102(b) of independent claim 1 and claims 2, 3, 6 and 8 which depend therefrom should clearly be withdrawn as lacking this important distinction.

Independent claims 10, 20 and 21 include similar recitations as newly amended claim 1. Claim 10 recites a step of “altering the duty cycle of the at least one waveform to adjust the output crest factor and output power of the at least one waveform generated by said electrosurgical generator based on the determined tissue impedance.” Claim 20 recites “means for altering the duty cycle of the at least one waveform to adjust the output crest factor and output power of the at least one waveform generated by said electrosurgical generator based on the determined tissue impedance.” Claim 21 also recites “a waveform generator for receiving the at least one waveform adjustment signal for altering the duty cycle of the at least one waveform to adjust the output crest factor and output power of the at least one waveform based on the determined tissue impedance.” For at least the same reasons discussed above with regard to independent claim 1, it is respectfully submitted that the independent claims 10, 20 and 21 are also not anticipated by Gines. Accordingly, the rejection under 35 USC 102(b) of claims 10, 20 and 21 and claims 11, 12, 16, 17, and 19 which respectively depend therefrom should also be withdrawn.

Claims 4 and 13 were rejected under 35 USC §103(a) as being unpatentable over Gines in view of U.S. Patent No. 4,961,047 to Carder (hereinafter “Carder”). Carder discloses an electrosurgery apparatus having an amplifier controlled by voltage and current signals. The signals are used to address a look-up table to obtain a corresponding impedance measurement. (Carder, Abstract). Carder, however, does not disclose adjustment of either crest factor or duty cycle of a waveform. Further, these terms are not even mentioned in the disclosure. The described power

control scheme does not disclose altering the duty cycle to adjust the crest factor of the at least one waveform based on impedance measurements and is only directed to adjusting the output power. Accordingly, the rejection under 35 U.S.C. 103(a) of claims 4 and 13 which depend from claims 1 and 10 respectively, should be withdrawn since Carder in no way anticipates, teaches or even remotely suggests applicant's claimed invention.

Claims 5, 9, 14 and 18 were rejected under 35 USC §103(a) as being unpatentable over Gines in view U.S. Patent No. 4,191,188 to Belt et al. (hereinafter "Belt"). It is respectfully submitted that the § 103(a) rejection fails to set forth a prima facie case of obviousness. As required,

[T]he Examiner bears the initial burden of factually supporting any prima facie conclusion of obviousness. If the Examiner does not produce a prima facie case, the applicant is under no obligation to submit evidence of nonobviousness.

MPEP § 2142.

In order to establish a prima facie case of obviousness, a rejection must satisfy the following criteria. There must be some suggestion, teaching, or motivation to modify the reference or combine the reference on which the rejection is based. There must also have been reasonable expectation of success by the hypothetical person of ordinary skill in the art, at the time the invention was made, that the modification or combination would work to produce beneficial results.

The combination put forth by the Examiner lacks suggestion and motivation to modify or combine Gines in view of Belt. More particularly, Gines lacks any suggestion to utilize duty cycle to adjust the crest factor of a waveform based on impedance measurements. Rather, Gines merely recites that "the control signal D may change the duty cycle of the R.F. Output Stage 13 thereby effectively changing the RMS output power." (Gines, col. 6, lines 24-26). Gines also recites that "the output power can be adjusted by changing the duty cycle or the crest factor." (Id., col. 6, lines

40-50). As the above-quoted portions indicate, Gines merely teaches that crest factor may be used as a variable to modify output power but does not teach adjustment of the crest factor itself (e.g., via duty cycle). It seems that the Examiner implicitly agrees with this characterization of Gines, since the Examiner states that Gines “fails to disclose the specific formulas for determining the output crest factor based on duty cycle.” (Final Office Action of July 31, 2006, p. 5).

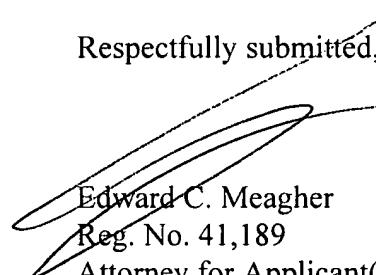
Belt discloses timing circuitry for adjusting crest factor of a waveform by altering the duty cycle thereof. However, Belt does not disclose making these adjustments in response to any type of control loop signals (e.g., impedance measurements). Belt discloses a control circuit including a zero voltage detector 20, a first timer 22, a second timer 24. (Belt, col. 4, lines 59-61). A duty cycle control 26 is connected to the first timer 22 and the second timer 24 to “simultaneously and proportionally vary the timing intervals of the first and second timers.” A potentiometer 80 is connected in series to the first and second timers 22, 24 wherein manual adjustment of the potentiometer varies the duration of pulses (e.g., duty cycle). (Id., col. 8, line 58 – col. 9, line 4). In particular, the potentiometer 80 includes a movable tap connected to the source as shown in Fig. 12, which only allows for manual adjustment of the duty cycle. In contrast with the present application and as disclosed in Belt, adjustments to the duty cycle and, hence, control of the crest factor is not performed automatically in response to impedance measurements as recited in independent claim 1. In Belt, duty cycle is controlled in response to manual adjustment of the potentiometer 80.

There is no suggestion, teaching, or motivation to modify or combine Gines in the manner suggested by the examiner. Gines does not disclose any device or method for adjusting the crest factor by controlling the duty factor. The automatic control circuit disclosed in Gines is only configured for controlling RF output power in response to impedance measurements. Belt does not

disclose any automatic control circuits which adjust output parameters of an electrosurgical generator in response to sensor measurements and simply relies on manual adjustment of the duty cycle to control the crest factor. Accordingly, it is respectfully submitted the rejection under 35 USC 103(a) of claims 5, 9, 14 and 18 should be withdrawn.

In view of the foregoing, it is therefore respectfully submitted that the newly amended claims 1, 10, 20 and 21 incorporating the subject matter of claims 5 and 14 place all of the claims in the present application, namely, claims 1-21 in condition for allowance. If the Examiner should have any questions or comments or would like to discuss the merits of the present application with Applicants' attorney of record or set up an interview at a convenient time for the Examiner, the Examiner is respectfully invited to contact Applicants' attorney of record at the phone number listed below at his earliest convenience.

Respectfully submitted,



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